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DECUS NO.	8-252
TITLE	PEEP - A DIRECTORY SEARCH PROGRAM
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SOURCE LANGUAGE	PAL-D

PEEP - A DIRECTORY SEARCH PROGRAM

DECUS Program Library Write-up DECUS No. 8-252

ABSTRACT

This program was written to augment the PIP LIST option since the latter does not give any information about the location of files on the disk or DECtape. Five options are available:

1. C - COUNT the number of free files and blocks.
2. L - LIST the files.
3. S - SEARCH for a named file.
4. D - DUMP the contents of a SAM block onto the T/T.
5. H - HALT in a DN specification.

The program reads into core all the DN and SAM blocks from the system device, disks or DECtape and asks for the required option, which is selected by typing one of the above letters. The options have the following functions:

C OPTION examines the DN blocks in core for missing (zero) file names, and examines the SAM blocks for unallocated blocks on the system device. Two numbers are typed out: (free files) F: (free blocks) B.

L OPTION gives a list of all the files on the system device in the following format (see also Figure 1):

FN: C, NAME, XXXXX, YYYYY; BLOCK 1 - BLOCK N, N
where, FN = 2 digit file number
C = type of file A-ASCII, B-BINARY, F-FORTRAN BINARY, S-SYSTEM, U-USER
NAME = the file name
XXXXX = 5 digit field and lowest core address
YYYYY = 5 digit field and starting address (entry point)
BLOCK 1, N = the block numbers on the system device, if these are not contiguous this format is repeated as often as necessary
N = the number of blocks used by the file

If a file number is not used, only the number is typed. The list ends with the numbers from the C option.

The list can be stopped at any time by typing a character (e.g. space-bar). The program returns to option selection.

S OPTION gives the statistics of a named file in a similar format to the list option (see Figure 2). If two or more files have the same name each can be examined by repeatedly calling for the file by name. If the file is called too often PEEP types a query (?) only. The lowest

unused file number can be obtained by asking for a no-name file, i.e. by hitting the return key only. Repeated use gives the numbers of all the unused files. Since the DN specification of such a file is 5 zero words the file type is given as ASCII with core address Ø, S.A. = Ø and no Ø blocks (see example in Figure 2).

D OPTION gives a print-out on the T/T of the contents of a SAM block specified by number (see Figure 3). There is one SAM block for each disk and 6 SAM blocks on a DECtape. Illegal block numbers are rejected by PEEP. The type-out is in 8 columns, 16 rows, but it can be stopped at any time by typing a character (e.g. space-bar).

H OPTION is used to change the starting address (entry point) of a file to the halt location of Monitor so that it can be called into core later and modified before running it or resaving it on the system device or another device. Thus a file can be called into core from one DECtape and written into another or a (possibly) modified copy made on the first DECtape. To use the H option the number of the file is typed and PEEP replies with the file name and the present starting address. The user then types 7636 and PEEP echoes file number, name and 7636. The user can accept that the DN block should be so modified by typing a return or he can change his mind and leave the starting address unmodified by typing any other character, such as space-bar or rub-out Typing errors cause cancellation of the option without modification of the starting address, which in any case can only be changed to 7636. Only User and System files are allowed to be 'halted.'

CORE USAGE

The program occupies locations 20 to 1777. It uses 2000 to 2577 to store the three DN blocks and one page above 2577 for each SAM block (for DECtape 2600 to 4177). The next page is used to store, temporarily, the block numbers of the file currently being examined before the type-out routine is entered. The basic I/O routine is used for communicating with the system device through Monitor; an effective JMS 7642 is used. The program can HALT for two reasons; 1) an error return to the I/O routine from Monitor due to a READ error gives a HALT at location 332; 2) after completion of an H option and modification of a DN block the program jumps to the halt location 7636 in Monitor.

NOTES

1. Monitor is file number Ø1, file name EX (space) C.

2. All numbers typed out have leading zeros suppressed, but zero = Ø.

3. Files containing noncontiguous pages of core have a start address 7777 in the DN entry in place of the lowest core address. PEEP does not allow the examination of the first block of the file to find the page assignments of the file.

4. CTRL/L returns S option to OPT.

5. CTRL/C returns computer to Monitor.

ACKNOWLEDGEMENT

This program is based on a Directory Search program given in DEC Software Performance

Summary, Volume 1, No. 1. Several deletions, a few corrections and many additions have been made.

Figure 1	Example of L OPTION type-out.
Figure 2	Example of the use of the S OPTION.
Figure 3	Example of D OPTION type-out from a 2 disk system.

.PEEP

FIGURE 1

OPT L

```
 1:S,EX C,     7ØØØ,     7ØØØ;     Ø-    11, 177-   2Ø2,   373-  375,  4Ø1-  4Ø1,
                                   774-  777,  26
 2:S, BNLD,    176ØØ,    177ØØ;    23-   23,   1
 3:S, HALT,    74ØØ,     7565;     24-   24,   1
 4:S, LOAD,    7ØØØ,     7ØØØ;     12-   14,   3
 5:S, .CD.,    Ø,        Ø;        15-   22,   6
 6:S, PIP,     7777,     1ØØØ;     26-   57,   32
 7:S, EDIT,    Ø,        26ØØ;     25-   25,   6Ø-   73,   15
10:S, PALD     Ø,        62ØØ;     74-   132,  37
11:S, PALP,    Ø,        62ØØ;     133-  171,  37
12:S, LOOK,    2ØØ,      2ØØ;      172-  174,  3
13:S, PALX,    66ØØ;     66ØØ;     175-  176,  2Ø3-  2Ø4,   4
14:S, TMC1,    172ØØ,    17375;    2Ø5-  2Ø6,  2
15:S, TMCØ,    72ØØ,     7375;     2Ø7-  21Ø,  2
16:S, BPNØ,    74ØØ,     7465;     211-  211,  1
17:S, BPN1,    174ØØ,    17465;    212-  212,  1
20:S, BTG,     6ØØØ,     6ØØØ;     213-  213,  1
21:U, NX3Ø,    Ø,        7636;     214-  232,  266-  266,  274-  3Ø3,  316-  324,
                                   37
22:S, PEEP,    Ø,        2ØØ;      233-  242,  1Ø
23:U, NX31,    17777,    1 Ø;      243-  244,  347-  35Ø,   4
24:A, NX3S,    Ø,        Ø;        245-  257,  13
25:S, F611,    Ø,        2ØØ;      260-  265,  325-  346,  351-  357,  37
26:S, .SYM,    Ø,        Ø;        3Ø4-  31Ø,  5
27:U, NX3D,    1 4ØØ,    1 Ø;      311-  315,  5
30:U, DTM2,    1 4ØØ,    1 Ø;      267-  273,  5
31:S, ST8K,    46ØØ,     2ØØ;      36Ø-  372,  376-  376,  14
32:A, JMD      Ø,        Ø;        417-  453,  455-  517,  100
33:S, FCL8,    Ø,        Ø;        377-  4ØØ,  4Ø2-  415,  16
34:S, NUL8,    1 Ø,      1 113;    416-        1
35:S, MEDL,    74ØØ,     176;      454-  454,  1
36:A, TEST,    Ø,        Ø;        52Ø-  52Ø,  1
37:B, TEST,    Ø,        Ø;        521-  521,  1
40:S, TEST,    Ø,        Ø;        522-  522,  1
41:U, TEST,    Ø,        Ø;        523-  523,  1
42
43
44
45
46
47
```

FIGURE 1 (Continued)

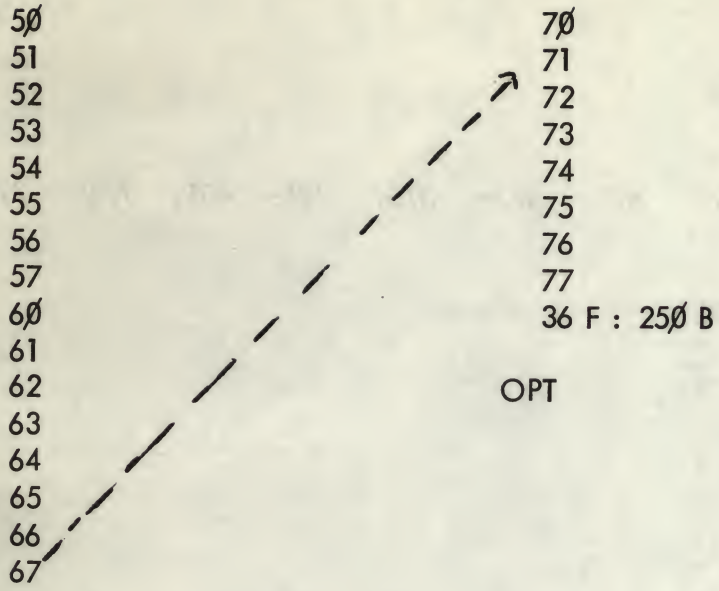

FIGURE 2

```
, PEEP

OPT S

EX C
   1:S,   7ØØØ,   7ØØØ;   Ø-   11,   177-   2Ø2,   373-   375,   4Ø1-   401,   774-   777,
                           26
PIP
   6:S,   7777,   1ØØØ;   26-   57,   32
TEST
  36:A,    Ø,      Ø;     52Ø-  52Ø,  1
TEST
  37:B,    Ø,      Ø;     521-  521,  1
TEST
  4Ø:S,    Ø,      Ø;     522-  522,  1
TEST
  41:U,    Ø,      Ø;     523-  523,  1
TEST
   ?
JMD
  32:A,    Ø,      Ø;     417-  453,  455-  517,  1ØØ

  42:A,    Ø,      Ø
```

FIGURE 3

```
. PEEP

OPT D1

 1Ø1   1Ø1   1Ø1   13Ø1   13Ø1   14Ø1   14Ø1   15Ø1
15Ø1   16Ø1   17Ø4   2ØØ4   21Ø4   21Ø5   21Ø5   21Ø5
21Ø5   21Ø5   21Ø5   21Ø2   21Ø3   21Ø7   21Ø6   21Ø6
21Ø6   21Ø6   21Ø6   22Ø6   22Ø6   22Ø6   22Ø6   22Ø6
22Ø6   22Ø6   22Ø6   23Ø6   23Ø6   24Ø6   24Ø6   24Ø6
24Ø6   24Ø6   24Ø6   24Ø6   24Ø6   24Ø6   24Ø6   24Ø6
25Ø7   25Ø7   25Ø7   25Ø7   25Ø7   25Ø7   21Ø7   3ØØ7
3ØØ7   3ØØ7   3ØØ7   3Ø07   211Ø   211Ø   211Ø   211Ø
211Ø   211Ø   211Ø   211Ø   261Ø   261Ø   261Ø   261Ø
261Ø   271Ø   271Ø   271Ø   271Ø   271Ø   211Ø   211Ø
211Ø   211Ø   211Ø   211Ø   211Ø   251Ø   251Ø   251Ø
251Ø   251Ø   251Ø   2511   2511   2511   2511   2511
2511   2511   2511   2511   2511   2511   2511   2311
2311   2511   2511   2511   2511   2511   2511   2511
3111   3111   3111   3111   3111   3111   3111   3111
3111   3111   3112   112    112    113    3113   33Ø1

OPT D2

 33    1     33    33    33    33    33    33
 33    33    33    33    33    33    34    32
 32    32    32    32    32    32    32    32
 32    32    32    32    32    32    32    32
 32    32    32    32    32    32    32    32
 32    32    32    32    35    32    32    32
 32    32    32    32    32    32    32    32
 32    32    32    32    32    32    32    32
 32    32    32    32    32    32    32    32
 32    32    32    32    32    32    32    32
 36    37    4Ø    41    Ø     Ø     Ø     Ø
 Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø
 Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø
 Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø
 Ø     Ø     Ø     Ø     Ø     Ø     Ø     Ø
 Ø     Ø     Ø     Ø     1ØØ   1ØØ   1ØØ   1ØØ

OPT
```

FLOW DIAGRAM OF PEEP
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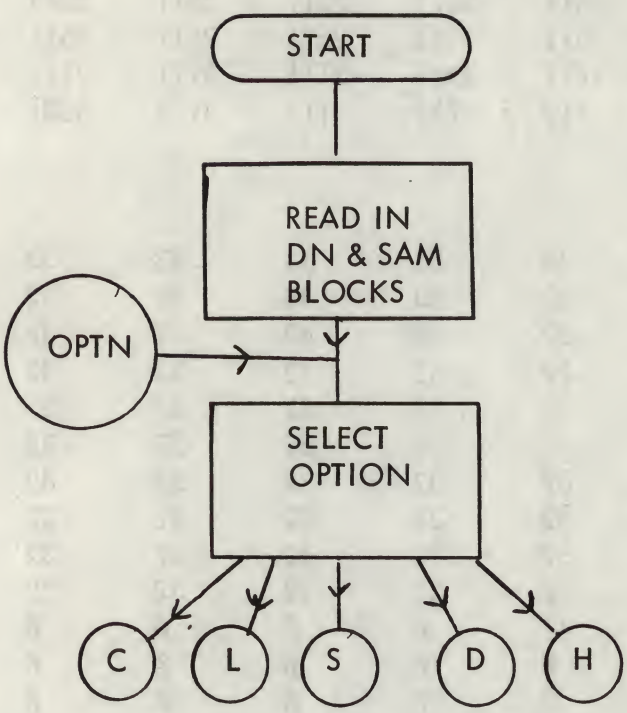
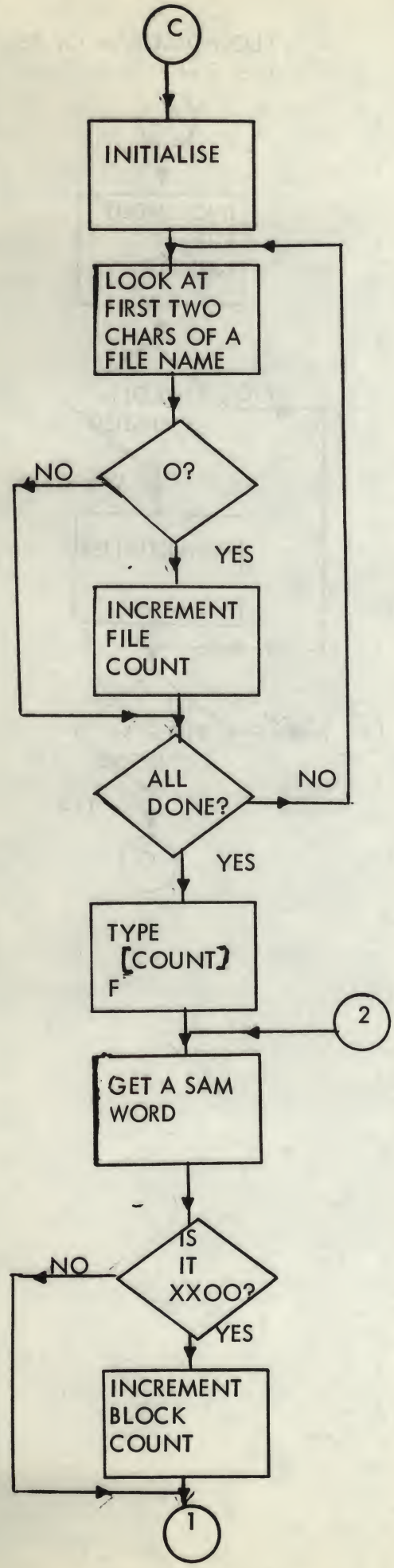
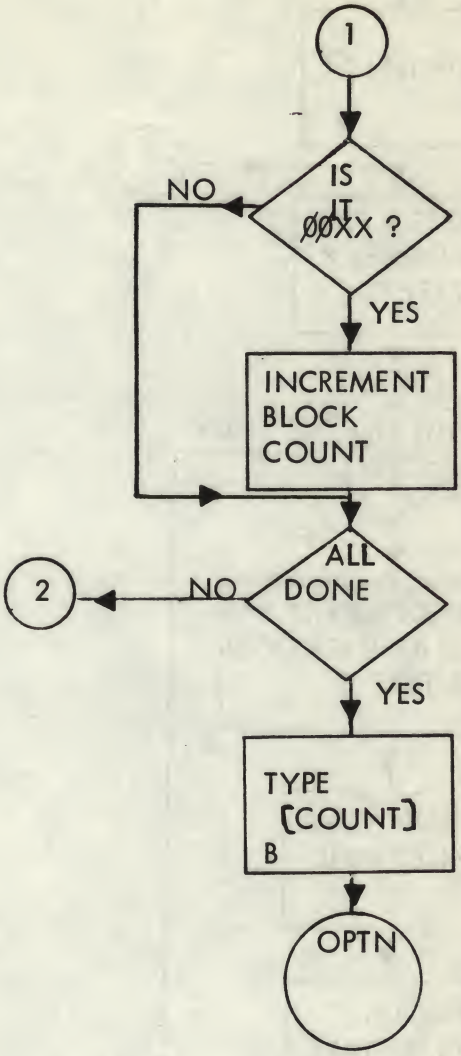
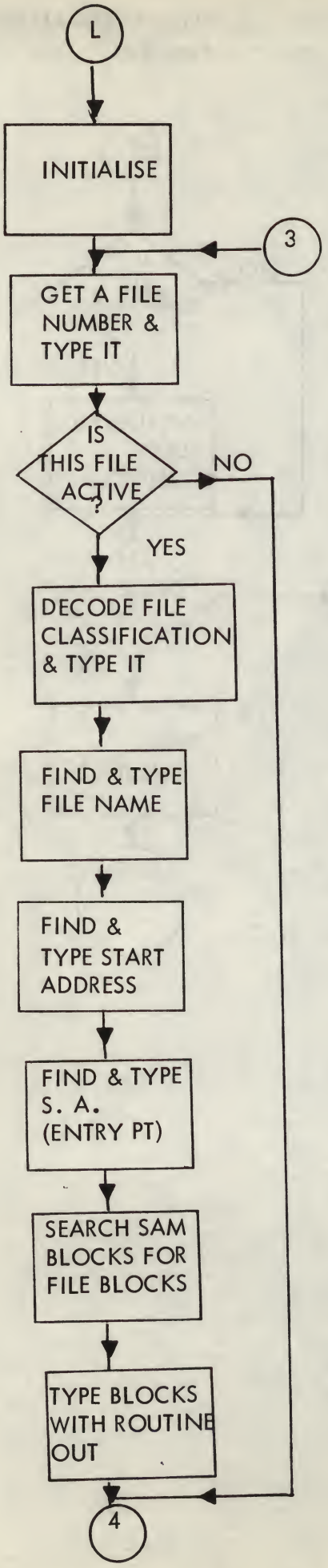
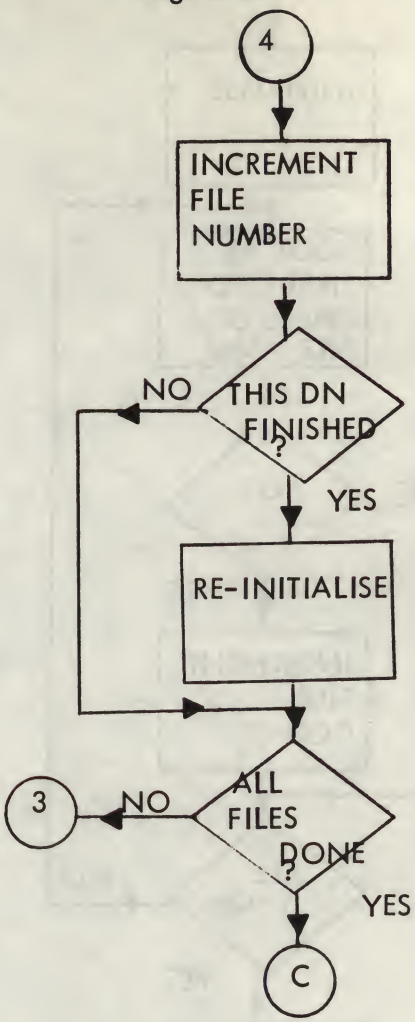
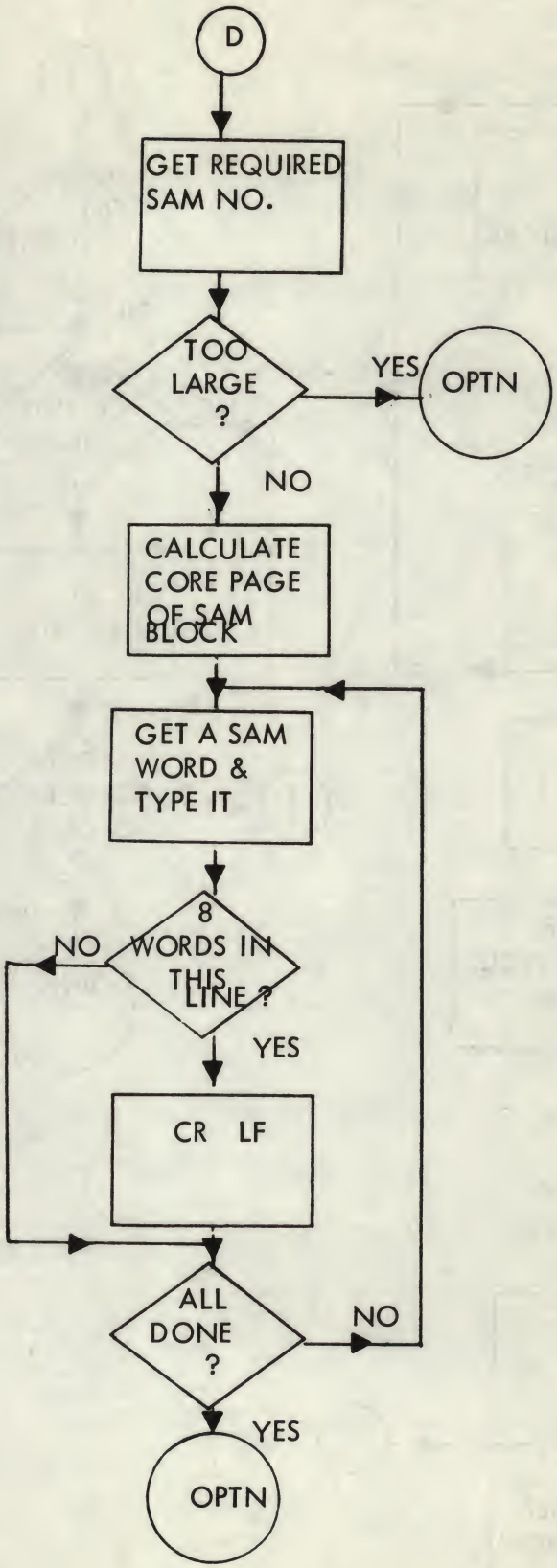


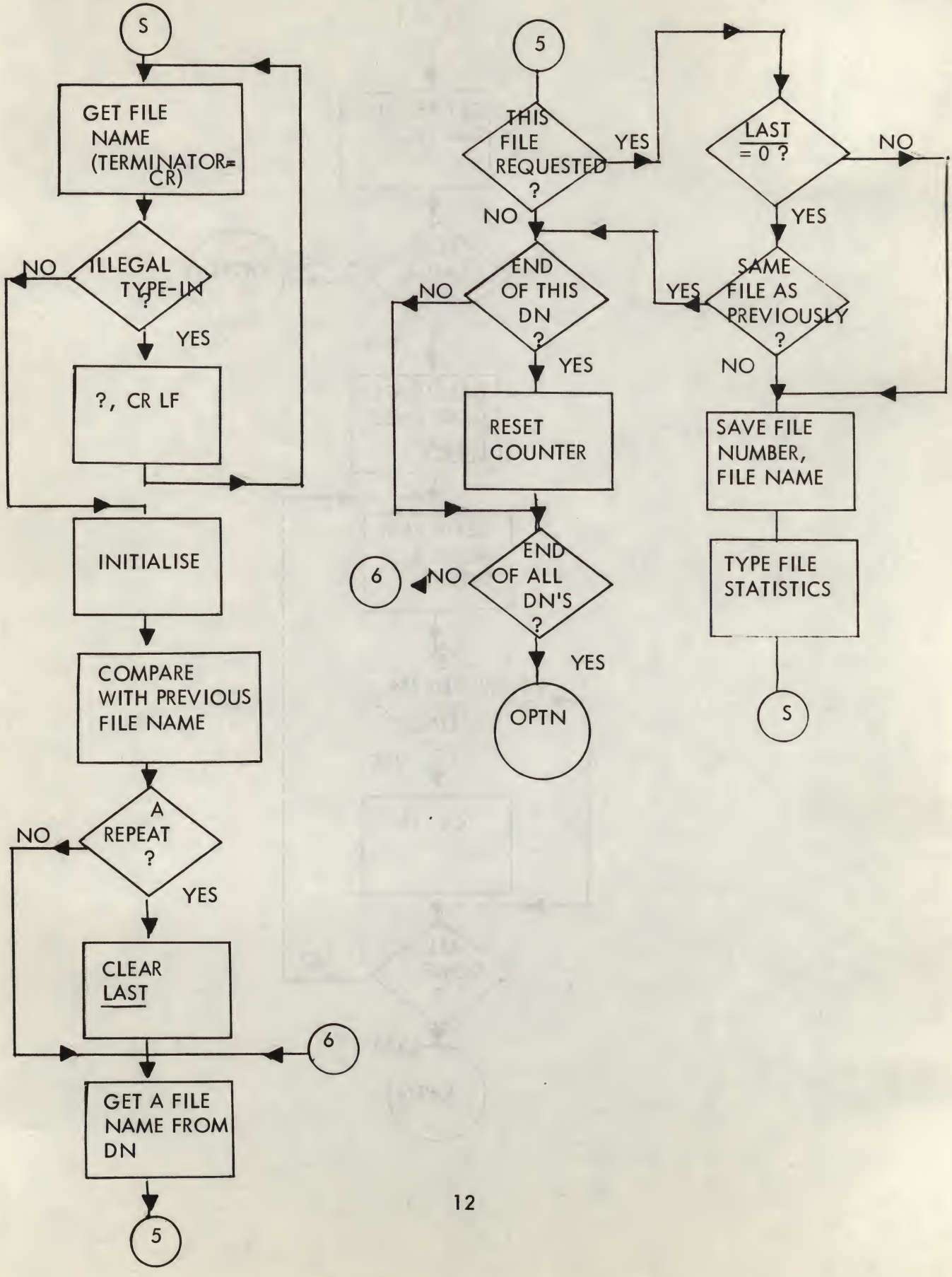

C
INITIALISE
LOOK AT FIRST TWO CHARS OF A FILE NAME
O?
NO
YES
INCREMENT FILE COUNT
ALL DONE?
NO
YES
TYPE [COUNT] F
2
GET A SAM WORD
IS IT XXOO?
NO
YES
INCREMENT BLOCK COUNT
1

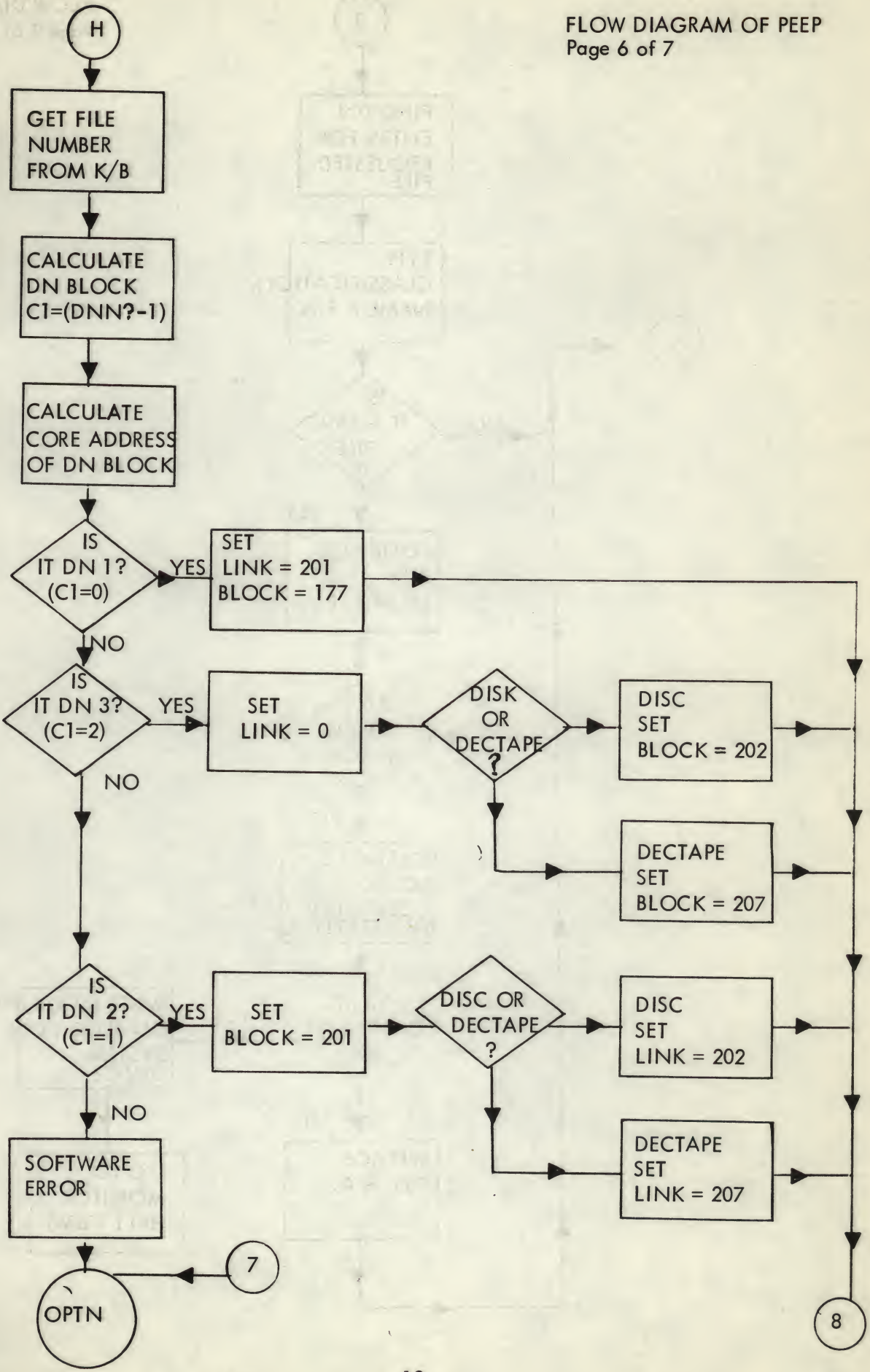

1
IS IT ØØXX ?
NO
YES
INCREMENT BLOCK COUNT
ALL DONE
2
NO
YES
TYPE [COUNT] B
OPTN

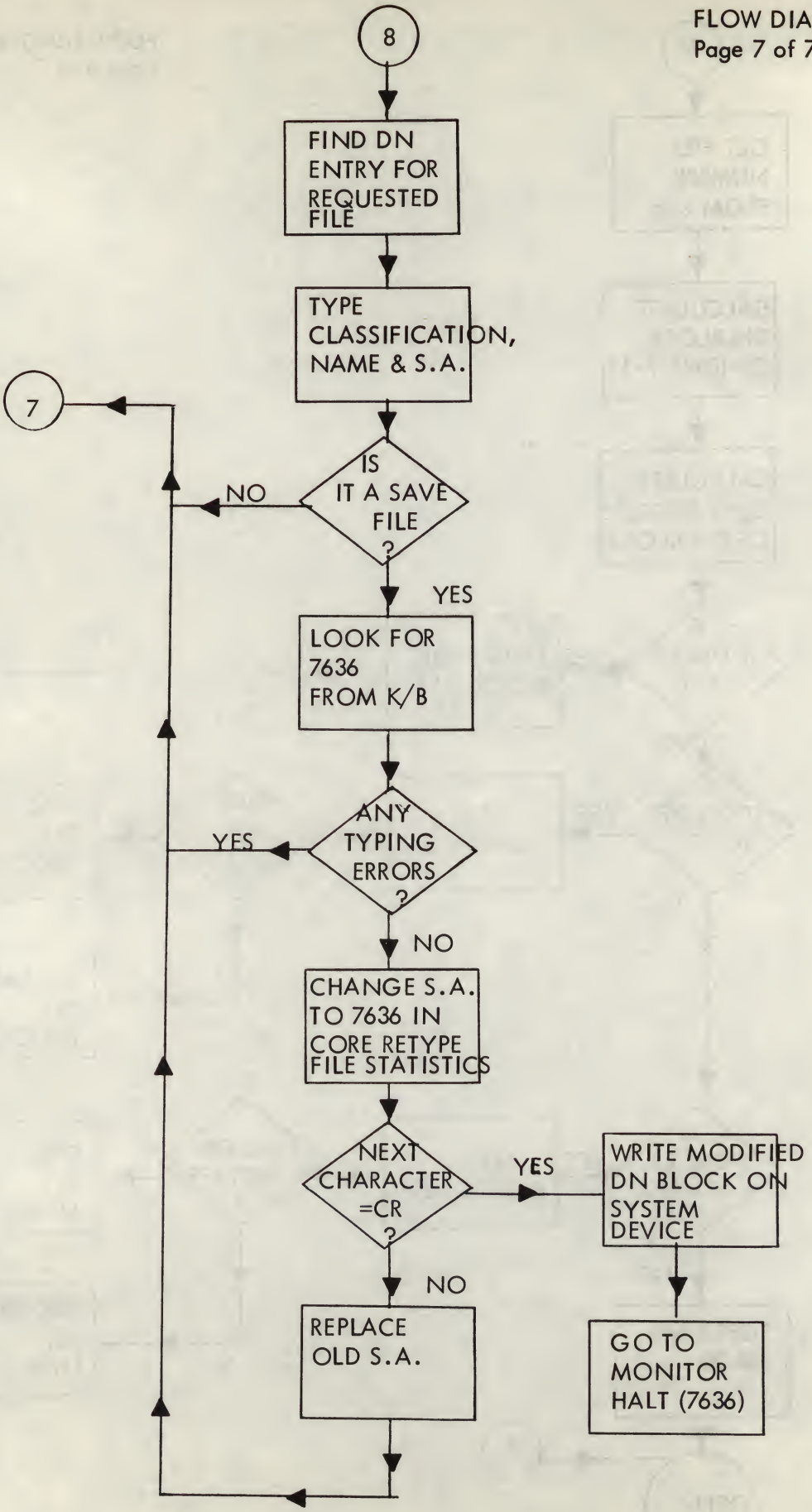

L
INITIALISE
3
GET A FILE NUMBER & TYPE IT
IS THIS FILE ACTIVE ?
NO
YES
DECODE FILE CLASSIFICATION & TYPE IT
FIND & TYPE FILE NAME
FIND & TYPE START ADDRESS
FIND & TYPE S. A. (ENTRY PT)
SEARCH SAM BLOCKS FOR FILE BLOCKS
TYPE BLOCKS WITH ROUTINE OUT
4


4
INCREMENT FILE NUMBER
NO
THIS DN FINISHED ?
YES
RE-INITIALISE
3
NO
ALL FILES DONE ?
YES
C


D
GET REQUIRED SAM NO.
TOO LARGE ?
YES
OPTN
NO
CALCULATE CORE PAGE OF SAM BLOCK
GET A SAM WORD & TYPE IT
8 WORDS IN THIS LINE ?
NO
YES
CR LF
ALL DONE ?
NO
YES
OPTN


S
GET FILE NAME (TERMINATOR= CR)
ILLEGAL TYPE-IN ?
NO
YES
?, CR LF
INITIALISE
COMPARE WITH PREVIOUS FILE NAME
A REPEAT ?
NO
YES
CLEAR LAST
6
GET A FILE NAME FROM DN
5
5
THIS FILE REQUESTED ?
YES
NO
LAST = 0 ?
NO
YES
END OF THIS DN ?
NO
YES
SAME FILE AS PREVIOUSLY ?
YES
NO
RESET COUNTER
SAVE FILE NUMBER, FILE NAME
6
NO
END OF ALL DN'S ?
YES
TYPE FILE STATISTICS
OPTN
S


H
GET FILE NUMBER FROM K/B
CALCULATE DN BLOCK C1=(DNN?-1)
CALCULATE CORE ADDRESS OF DN BLOCK
IS IT DN 1? (C1=0)
YES
SET LINK = 201 BLOCK = 177
NO
IS IT DN 3? (C1=2)
YES
SET LINK = 0
DISK OR DECTAPE ?
DISC SET BLOCK = 202
DECTAPE SET BLOCK = 207
NO
IS IT DN 2? (C1=1)
YES
SET BLOCK = 201
DISC OR DECTAPE ?
DISC SET LINK = 202
DECTAPE SET LINK = 207
NO
SOFTWARE ERROR
7
OPTN
8


8
FIND DN ENTRY FOR REQUESTED FILE
TYPE CLASSIFICATION, NAME & S.A.
7
IS IT A SAVE FILE ?
NO
YES
LOOK FOR 7636 FROM K/B
ANY TYPING ERRORS ?
YES
NO
CHANGE S.A. TO 7636 IN CORE RETYPE FILE STATISTICS
NEXT CHARACTER =CR ?
YES
WRITE MODIFIED DN BLOCK ON SYSTEM DEVICE
NO
REPLACE OLD S.A.
GO TO MONITOR HALT (7636)

```
.PALD
*OUT-R:
*
*IN-S:JMD
*
*OPT-
```

ABFSU	1676
ABUFF	ØØ44
ACLASS	1734
ADNBF	ØØ43
ASAMBF	ØØ46
ASK	Ø3Ø2
B	1736
BLKS	Ø537
BLOK	Ø325
BUFF	ØØ45
CHAR	Ø1ØØ
CHARS	Ø142
CHK	1315
CLASS	1735
COL	ØØ75
COMMA	Ø131
CORE	Ø326
COUNT	1ØØØ
CR	Ø124
CRLF	Ø351
CTRL	Ø334
C1	ØØ4Ø
C2	ØØ41
C25Ø	Ø137
C3	ØØ42
C7	Ø135
DASH	Ø13Ø
DATA	Ø4ØØ
DCNT	Ø134
DNBF	2ØØØ
DNDATA	1121
DNS	Ø2Ø5
DUMP	14ØØ
D1	1427
D2	1452
F	1737
FIND	16Ø5
FINDIT	16ØØ
FIRST	Ø127
FLD	Ø116
FNO	ØØ66
FNOK	ØØ65
FUNC	Ø324

GET	1342
GOTCR	1367
GOTIT	162Ø
HALT	1456
KTR	ØØ72
LAST	Ø112
LCT	Ø141
LF	Ø125
LFNO	Ø113
LINK	Ø327
LIST	Ø6ØØ
LNCT	Ø123
LOOP	Ø725
LST	1265
LWORD1	Ø11Ø
LWORD2	Ø111
MASK	Ø1Ø3
MC	ØØ5Ø
MCR	ØØ62
MCTRL	ØØ61
MCTRLC	ØØ64
MDMS	ØØ53
MFNO	ØØ67
MHMD	ØØ54
MLMC	ØØ51
MODDN	1673
MONHLT	1675
MONRET	Ø114
MORE	Ø656
MRO	ØØ63
MSAM	Ø1Ø6
MSML	ØØ52
M1ØØ	Ø126
M2	ØØ36
M2Ø	Ø117
M2ØØ	ØØ37
M23	Ø12Ø
M24	Ø14Ø
M26	Ø121
M27	Ø122
M3	ØØ32
M3Ø	ØØ33
M31	ØØ34
M4	ØØ35
M8	ØØ31
NDN	Ø1Ø4
NEXT	Ø444
NEXTT	Ø6Ø7
NLINE	Ø524
NOHALT	167Ø

NOTYET	13Ø2
NSAM	Ø1Ø5
NXT	1Ø12
NXT2	1Ø53
NZ	Ø514
0	ØØ55
OPT	ØØ47
OPTN	Ø25Ø
OUT	Ø426
OUTT	Ø463
P	ØØ56
PASSC	ØØ71
PASSK	Ø757
PASS1	Ø713
PASS2	Ø72Ø
PNU2	Ø473
PRNT	11Ø1
PTEM	Ø132
P177	ØØ21
P2Ø	Ø136
P2ØØ	ØØ24
P2Ø1	Ø145
P2Ø2	Ø146
P2Ø7	Ø147
P3	ØØ2Ø
P4	ØØ3Ø
P4Ø	ØØ23
P5	ØØ27
P7	ØØ22
P7636	Ø143
P77	ØØ25
P77ØØ	ØØ26
QMARK	ØØ77
RBLK	Ø322
READ	Ø2ØØ
SAMFND	Ø76Ø
SAMN	Ø1Ø7
SAMS	Ø217
SAVEF	Ø144
SCOL	ØØ76
SEARCH	12ØØ
SERCH	1244
SETLF	1324
SP	ØØ6Ø
SRCH	Ø675
SSS	Ø115
SYSIO	ØØ74

T	ØØ57
TEMP	ØØ73
TEST	1266
THISDN	Ø664
THSDN	13Ø7
TSTW	ØØ7Ø
TYPE	Ø342
WBLK	1742
WBLOK	1745
WCORE	1746
WHAT	Ø273
WHICH	1236
WLINK	1747
WORD1	Ø1Ø1
WORD2	Ø1Ø2
WSET	151Ø
WSET1	1542
WSET2	1527
ZZ	Ø133

```
                    /PEEP MK 3
                    /
                    *20
                    /
ØØ2Ø    ØØØ3    P3,         3
ØØ21    Ø177    P177,       177
ØØ22    ØØØ7    P7,         7
ØØ23    ØØ4Ø    P4Ø,        4Ø
ØØ24    Ø2ØØ    P2ØØ,       2ØØ
ØØ25    ØØ77    P77,        77
ØØ26    77ØØ    P77ØØ,      77ØØ
ØØ27    ØØØ5    P5,         5
ØØ3Ø    ØØØ4    P4,         4
ØØ31    777Ø    MS,         -1Ø
ØØ32    7775    M3,         -3
ØØ33    775Ø    M3Ø,        -3Ø
ØØ34    7747    M31,        -31
ØØ35    7774    M4,         -4
ØØ36    7776    M2,         -2
ØØ37    76ØØ    M2ØØ,       -2ØØ
ØØ4Ø    ØØØØ    C1,         Ø
ØØ41    ØØØØ    C2,         Ø
ØØ42    ØØØØ    C3,         Ø
ØØ43    2ØØØ    ADNBF,      DNBF
ØØ44    ØØØØ    ABUFF,      Ø           /DNBF + 12ØØ FOR 2 DISCS; +22ØØ FOR DECTAPE
ØØ45    ØØØØ    BUFF,       Ø
ØØ46    ØØØØ    ASAMBF,     Ø           /DNBF + 6ØØ FOR 2 DISCS OR DECTAPE
ØØ47    ØØØØ    OPT,        Ø
ØØ5Ø    7735    MC,         -43         /-C+24Ø
ØØ51    7767    MLMC,       43-54       /C-L
ØØ52    7771    MSML,       54-63       /L-S
ØØ53    ØØ17    MDMS,       63-44       /S-D
ØØ54    7774    MHMD,       44-5Ø
ØØ55    Ø317    0,          317
ØØ56    Ø32Ø    P,          32Ø
ØØ57    0324    T,          324
                    /
ØØ6Ø    Ø24Ø    SP,         24Ø
ØØ61    7564    MCTRL,      -214
ØØ62    7777    MCR,        214-215
ØØ63    7616    MRO,        215-377
ØØ64    Ø174    MCTRLC,     377-2Ø3
ØØ65    ØØØØ    FNOK,       Ø
ØØ66    ØØØØ    FNO,        Ø
ØØ67    ØØØØ    MFNO,       Ø
ØØ7Ø    ØØØØ    TSTW,       Ø
ØØ71    ØØØØ    PASSC,      Ø
ØØ72    ØØØØ    KTR,        Ø           /SAM SEARCH COUNTER
ØØ73    ØØØØ    TEMP,       Ø           /BLOCK POINTER
ØØ74    7642    SYSIO       7642        /MONITOR I/O ROUTINE ADDR.
ØØ75    Ø272    COL,        272
```

```
ØØ76  Ø273  SCOL,    273
ØØ77  Ø277  QMARK,   277
Ø1ØØ  ØØØØ  CHAR,    Ø
Ø1Ø1  ØØØØ  WORD1,   Ø
Ø1Ø2  ØØØØ  WORD2,   Ø
Ø1Ø3  ØØØØ  MASK,    Ø
Ø1Ø4  ØØØØ  NDN,     Ø
Ø1Ø5  ØØØØ  NSAM,    Ø
Ø1Ø6  ØØØØ  MSAM,    Ø
Ø1Ø7  ØØØØ  SAMN,    Ø
Ø11Ø  7777  LWORD1,  7777
Ø111  7777  LWORD2,  7777
Ø112  ØØØØ  LAST,    Ø
Ø113  ØØØØ  LFNO,    Ø
Ø114  76ØØ  MONRET,  76ØØ
Ø115  ØØØØ  SSS,     Ø
                     /
Ø116  ØØØØ  FLD,     Ø
Ø117  776Ø  M2Ø,     -2Ø
Ø12Ø  7755  M23,     -23
Ø121  7752  M26,     -26
Ø122  7751  M27,     -27
Ø123  ØØØØ  LNCT,    Ø
Ø124  Ø215  CR,      215
Ø125  Ø212  LF,      212
Ø126  77ØØ  M1ØØ,    -1ØØ
Ø127  ØØØØ  FIRST,   Ø
Ø13Ø  Ø255  DASH,    255
Ø131  Ø254  COMMA,   254
Ø132  ØØØØ  PTEM,    Ø
Ø133  ØØØØ  ZZ,      Ø
Ø134  ØØØØ  DCNT,    Ø
Ø135  ØØØ7  C7,      7
Ø136  ØØ2Ø  P2Ø,     2Ø
Ø137  Ø26Ø  C26Ø,    26Ø
Ø14Ø  7754  M24,     -24
Ø141  ØØØØ  LCT,     Ø
Ø142  ØØØØ  CHARS,   Ø
Ø143  7636  P7636,   7636
Ø144  ØØØØ  SAVEF,   Ø
Ø145  Ø2Ø1  P2Ø1,    2Ø1
Ø146  Ø2Ø2  P2Ø2,    2Ø2
Ø147  Ø2Ø7  P2Ø7,    2Ø7
                     /
                     / FETCH DN & SAM BLOCKS FROM DISCS OR DECTAPE
                     /
                     *2ØØ
                     /
Ø2ØØ  1Ø43  READ,    TAD ADNBF
Ø2Ø1  3326           DCA CORE
Ø2Ø2  31Ø4           DCA NDN     /NO. OF DN BLKS.
```

```
Ø2Ø3  31Ø5          DCA NSAM   /NO.  OF SAM BLKS.
Ø2Ø4  1Ø21          TAD P177
Ø2Ø5  3325    DNS,  DCA BLOK
Ø2Ø6  4322          JMS RBLK
Ø2Ø7  1Ø24          TAD P2ØØ
Ø21Ø  1326          TAD CORE
Ø211  3326          DCA CORE
Ø212  21Ø4          ISZ NDN
Ø213  1327          TAD LINK
Ø214  744Ø          SZA
Ø215  52Ø5          JMP DNS
Ø216  1Ø24          TAD P2ØØ
Ø217  3325    SAMS, DCA BLOK
Ø22Ø  4322          JMS RBLK   /READ IN SAM BLOKS.
Ø221  1Ø24          TAD P2ØØ
Ø222  1326          TAD CORE
Ø223  3326          DCA CORE
Ø224  21Ø5          ISZ NSAM
Ø225  1327          TAD LINK
Ø226  744Ø          SZA
Ø227  5217          JMP SAMS
Ø23Ø  11Ø4          TAD NDN    /INIT. BUFFER ADDRS.
Ø231  7112          CLL RTR
Ø232  7Ø12          RTR
Ø233  7Ø12          RTR
Ø234  1Ø43          TAD ADNBF
Ø235  3Ø46          DCA ASAMBF
Ø236  11Ø5          TAD NSAM
Ø237  7112          CLL RTR
Ø24Ø  7Ø12          RTR
Ø241  7Ø12          RTR
Ø242  1Ø46          TAD ASAMBF
Ø243  3Ø44          DCA ABUFF
Ø244  6Ø32          KCC
Ø245  6Ø46          TLS
Ø246  4351          JMS.CRLF
Ø247  3Ø47          DCA OPT
                    /
                    /SELECT OPTION
                    /
Ø25Ø  72ØØ    OPTN, CLA
Ø251  3115          DCA SSS
Ø252  4351          JMS CRLF
Ø253  43Ø2          JMS ASK
Ø254  1Ø5Ø          TAD MC
Ø255  745Ø          SNA        /IS IT COUNT OPTION ?
Ø256  5777          JMP COUNT
Ø257  1Ø51          TAD MLMC
Ø26Ø  745Ø          SNA        /IS IT LIST OPTION ?
```

```
0261  5776          JMP LIST
0262  1052          TAD MSML
0263  7450          SNA          /IS IT SEARCH OPTION ?
0264  5775          JMP SEARCH
0265  1053          TAD MDMS
0266  7450          SNA          /IS IT DUMP OPTION ?
0267  5774          JMP DUMP
0270  1054          TAD MHMD
0271  7450          SNA          /IS IT HALT OPTION ?
0272  5773          JMP HALT
0273  7200  WHAT,   CLA          /ILLEGAL OPTION
0274  4351          JMS CRLF
0275  1060          TAD SP
0276  4342          JMS TYPE
0277  1077          TAD QMARK
0300  4342          JMS TYPE
0301  5250          JMP OPTN
                /
0302  0000  ASK,    0
0303  7200          CLA
0304  1055          TAD O
0305  4342          JMS TYPE
0306  1056          TAD P
0307  4342          JMS TYPE
0310  1057          TAD T
0311  4342          JMS TYPE
0312  1060          TAD SP
0313  4342          JMS TYPE
0314  4772          JMS GET
0315  5314          JMP .-1      /R.O.
0316  5250          JMP OPTN
0317  3047          DCA OPT
0320  1047          TAD OPT
0321  5702          JMP I ASK
                /
0322  0000  RBLK,    0
0323  4474          JMS I SYSIO
0324  0003  FUNC,    3
0325  0000  BLOK,    0
0326  0000  CORE,    0
0327  0000  LINK,    0
0330  7410          SKP
0331  5722          JMP I RBLK
0332  7402          HLT
0333  5200          JMP READ
                /
0334  0055  CTRL,    O
0335  1061          TAD MCTRL    /-↑L
```

```
0336  7440          SZA
0337  5734          JMP I CTRL
0340  3047          DCA OPT
0341  5250          JMP OPTN
                    /
0342  0000  TYPE,   0
0343  6041          TSF
0344  5343          JMP .-1
0345  6046          TLS
0346  7200          CLA
0347  2123          ISZ LNCT      /COUNT CHARS. IN A LINE
0350  5742          JMP I TYPE
                    /
0351  0000  CRLF,   0
0352  3123          DCA LNCT
0353  1124          TAD CR
0354  4342          JMS TYPE
0355  1125          TAD LF
0356  4342          JMS TYPE
0357  5751          JMP I CRLF
                    /
0372  1342
0373  1456
0374  1400
0375  1200
0376  0600
0377  1000
                    PAGE
                    /
0400  0000  DATA,   0
0401  1075          TAD COL
0402  4777          JMS    PE
0403  1441          TAD I C2
0404  4776          JMS ABFSU     /TYPE FILE CLASSIFICATION
0405  1041          TAD C2
0406  1035          TAD M4
0407  3041          DCA C2
0410  1441          TAD I C2      /TYPE FILE NAME
0411  4775          JMS PRNT
0412  2041          ISZ C2
0413  1441          TAD I C2
0414  4775          JMS PRNT
0415  2041          ISZ C2
0416  2041          ISZ C2
0417  1131          TAD COMMA
0420  4777          JMS TYPE
0421  1116          TAD FLD
0422  4777          JMS TYPE
0423  1441          TAD I C2      /TYPE S.A.
0424  4263          JMS OUTT
```

```
ø425  56øø          JMP I DATA
                /
ø426  øøøø  OUT,    ø           /O/P A 4 DIGIT NO.
ø427  72øø          CLA
ø43ø  1ø44          TAD ABUFF
ø431  3ø45          DCA BUFF
ø432  1123          TAD LNCT
ø433  1126          TAD M1øø
ø434  77øø          SMA CLA     /LINE FILLED ?
ø435  4324          JMS NLINE   /YES CR LF & TAB
ø436  1445          TAD I BUFF  /NO
ø437  751ø          SPA
ø44ø  5337          JMP BLKS    /ALL DONE - O/P NO. OF BLOCKS
ø441  3127          DCA FIRST
ø442  1127          TAD FIRST
ø443  4263          JMS OUTT
ø444  2ø45  NEXT,   ISZ BUFF
ø445  1445          TAD I BUFF  /GET NEXT BLOCK NO.
ø446  7ø41          CIA
ø447  2127          ISZ FIRST
ø45ø  1127          TAD FIRST
ø451  765ø          SNA CLA     /= PRESENT BLK. NO. ?
ø452  5244          JMP NEXT    /YES
ø453  113ø          TAD DASH    /NO - END OF A RUN OF BLKS.
ø454  4777          JMS TYPE
ø455  7ø4ø          CMA
ø456  1127          TAD FIRST
ø457  4263          JMS OUTT
ø46ø  1131          TAD COMMA
ø461  4777          JMS TYPE
ø462  5232          JMP OUT+4   /LOOK FOR MORE BLKS.
                /
ø463  øøøø  OUTT,   ø
ø464  3132          DCA PTEM
ø465  7ø4ø          CMA
ø466  3133          DCA ZZ
ø467  1ø35          TAD M4      /INIT. DIGIT COUNTER
ø47ø  3134          DCA DCNT
ø471  1132          TAD PTEM
ø472  71ø4          RAL CLL
ø473  7øø4  PNU2,   RAL
ø474  7øø6          RTL
ø475  3132          DCA PTEM
ø476  1132          TAD PTEM
ø477  ø135          AND C7
ø5øø  744ø          SZA
ø5ø1  5314          JMP NZ      /DIGIT NOT =ø
ø5ø2  1133          TAD ZZ
```

```
Ø5Ø3  765Ø          SNA CLA     /LEADING Ø ?
Ø5Ø4  5314          JMP NZ      /NO
Ø5Ø5  1134          TAD DCNT
Ø5Ø6  7ØØ1          IAC
Ø5Ø7  765Ø          SNA CLA
Ø51Ø  1136          TAD P2Ø     /TYPE LAST Ø IF NO. = Ø
Ø511  1Ø6Ø          TAD SP      /ELSE TYPE SPACE
Ø512  4777          JMS TYPE
Ø513  5317          JMP NZ+3
Ø514  1137  NZ,     TAD C26Ø
Ø515  4777          JMS TYPE
Ø516  3133          DCA ZZ
Ø517  1132          TAD PTEM
Ø52Ø  2134          ISZ DCNT
Ø521  5273          JMP PNU2
Ø522  72ØØ          CLA
Ø523  5663          JMP I OUTT
                    /
Ø524  ØØØØ  NLINE,  Ø
Ø525  4774          JMS CRLF
Ø526  1115          TAD SSS     /SET TABULATION
Ø527  1Ø33          TAD M3Ø     /    27 FOR LIST OPTION
Ø53Ø  3141          DCA LCT     /    22 FOR SEARCH OPTION
Ø531  3123          DCA LNCT
Ø532  1Ø6Ø          TAD SP      /DO TAB.
Ø533  4777          JMS TYPE
Ø534  2141          ISZ LCT
Ø535  5332          JMP .-3
Ø536  5724          JMP I NLINE
                    /
Ø537  72ØØ  BLKS,   CLA
Ø54Ø  1Ø6Ø          TAD SP
Ø541  4777          JMS TYPE
Ø542  1Ø44          TAD ABUFF   /CALCULATE NO. OF BLKS.
Ø543  7Ø41          CIA
Ø544  1Ø45          TAD BUFF
Ø545  4263          JMS OUTT
Ø546  5626          JMP I OUT
                    /
Ø574  Ø351
Ø575  11Ø1
Ø576  1676
Ø577  Ø342
                    PAGE
                    /
Ø6ØØ  72Ø1  LIST,   CLA IAC
Ø6Ø1  3Ø66          DCA FNO     /INIT. FILE NO. TO 1
Ø6Ø2  1Ø43          TAD ADNBF
Ø6Ø3  1Ø22          TAD P7
Ø6Ø4  3Ø4Ø          DCA C1      /SET TO FIRST EXTENSION
Ø6Ø5  1Ø34          TAD M31
```

```
Ø6Ø6  3Ø65          DCA FNOK    /SET NO. OF FILES/DN
Ø6Ø7  4777  NEXTT,  JMS CRLF    /CR LF
Ø61Ø  6Ø31          KSF         /RETURN TO OPTION ?
Ø611  741Ø          SKP
Ø612  5776          JMP OPTN-4
Ø613  1Ø66          TAD FNO
Ø614  4775          JMS OUTT    /TYPE PRESENT FILE NO.
Ø615  144Ø          TAD I C1    /GET DN EXTENSION WORD
Ø616  ØØ25          AND P77     /MASK FILE NO.
Ø617  765Ø          SNA CLA     /IS THIS FILE ACTIVE ?
Ø62Ø  5256          JMP MORE    /NO
Ø621  1Ø4Ø          TAD C1
Ø622  1Ø35          TAD M4
Ø623  3Ø41          DCA C2
Ø624  1Ø75          TAD COL
Ø625  4774          JMS TYPE
Ø626  144Ø          TAD I C1
Ø627  4773          JMS ABFSU   /TYPE FILE CLASSIFICATION
Ø63Ø  1441          TAD I C2
Ø631  4772          JMS PRNT    /TYPE FIRST 2 CHARS. OF FILE NAME
Ø632  2Ø41          ISZ C2
Ø633  1441          TAD I C2
Ø634  4772          JMS PRNT    /TYPE SECOND 2 CHARS.
Ø635  1131          TAD COMMA
Ø636  4774          JMS TYPE
Ø637  1116          TAD FLD
Ø64Ø  4774          JMS TYPE
Ø641  2Ø41          ISZ C2
Ø642  1441          TAD I C2
Ø643  4775          JMS OUTT    /TYPE START ADDR.
Ø644  1131          TAD COMMA
Ø645  4774          JMS TYPE
Ø646  1116          TAD FLD
Ø647  4774          JMS TYPE
Ø65Ø  2Ø41          ISZ C2
Ø651  1441          TAD I C2
Ø652  4775          JMS OUTT    /TYPE S.A. (ENTRY PT.)
Ø653  1Ø76          TAD SCOL
Ø654  4774          JMS TYPE
Ø655  4275          JMS SRCH
Ø656  2Ø66  MORE,   ISZ FNO
Ø657  2Ø65          ISZ FNOK
Ø66Ø  5264          JMP THISDN
Ø661  1Ø34          TAD M31
Ø662  3Ø65          DCA FNOK
Ø663  1Ø2Ø          TAD P3
Ø664  1Ø4Ø  THISDN, TAD C1
Ø665  1Ø27          TAD P5
```

```
0666  3040          DCA C1
0667  1066          TAD FNO
0670  7041          CIA
0671  1025          TAD P77
0672  7700          SMA CLA
0673  5207          JMP NEXTT
0674  5771          JMP COUNT  /ALL FILES LISTED
                /
0675  0000  SRCH,   0
0676  1066          TAD FNO
0677  7041          CIA
0700  3067          DCA MFNO   /-(FILE NO.)
0701  1044          TAD ABUFF  /ADDR. OF BLOCK BUFFER
0702  3045          DCA BUFF
0703  7040          CMA
0704  3445          DCA I BUFF /INIT. START OF BLOCK BUFFER
0705  3041          DCA C2
0706  1105          TAD NSAM   /SET    -(NO. OF SAM BLKS.)
0707  7041          CIA
0710  3106          DCA MSAM
0711  1046          TAD ASAMBF
0712  3357          DCA PASSK  /BLOCK POINTER
0713  1067  PASS1,  TAD MFNO
0714  3070          DCA TSTW   /SET    -(FILE NO.) IN TEST WORD
0715  1036          TAD M2
0716  3071          DCA PASSC  /INIT. PASS COUNTER
0717  1025          TAD P77    /MASK FOR BLOKS. 0-177
0720  3103  PASS2,  DCA MASK
0721  1037          TAD M200
0722  3072          DCA KTR    /COUNTER SET AT -200
0723  1357          TAD PASSK
0724  3073          DCA TEMP
0725  1473  LOOP,   TAD I TEMP /FETCH AND MASK
0726  0103          AND MASK   / SAM NO.
0727  1070          TAD TSTW   /COMPARE WITH TEST WORD
0730  7650          SNA CLA
0731  4360          JMS SAMFND /FOUND MATCH - STORE
0732  2073          ISZ TEMP
0733  2041          ISZ C2
0734  2072          ISZ KTR    /END OF PASS 1 ?
0735  5325          JMP LOOP   /NO REPEAT
0736  1070          TAD TSTW   /SET
0737  7006          RTL        / TEST
0740  7006          RTL        / WORD
0741  7006          RTL        / FOR
0742  0026          AND P7700  / BLOCKS
0743  3070          DCA TSTW   / 200-377
0744  1026          TAD P7700  /CHANGE MASK FOR PASS 2
0745  2071          ISZ PASSC  /SKIP IF END PASS 2
0746  5320          JMP PASS2
0747  7200          CLA
```

```
0750  1357          TAD PASSK
0751  1024          TAD P200
0752  3357          DCA PASSK
0753  2106          ISZ MSAM    /HAVE ALL SAM BLKS. BEEN SEARCHED ?
0754  5313          JMP PASS1   /SEARCH NEXT SAM BLK.
0755  4770          JMS OUT
0756  5675          JMP I SRCH
0757  0000  PASSK,   0
              /
0760  0000  SAMFND,  0
0761  1041          TAD C2
0762  3445          DCA I BUFF
0763  7040          CMA
0764  2045          ISZ BUFF
0765  3445          DCA I BUFF
0766  5760          JMP I SAMFND
              /
0770  0426
0771  1000
0772  1101
0773  1676
0774  0342
0775  0463
0776  0244
0777  0351
              PAGE
              /
1000  4777  COUNT,  JMS CRLF
1001  3066          DCA FNO
1002  1020          TAD P3      /INIT. DN POINTER TO DNBF+3
1003  1043          TAD ADNBF
1004  3040          DCA C1
1005  1025          TAD P77     /INIT. FILE NO. COUNT
1006  7041          CIA
1007  3041          DCA C2
1010  1034          TAD M31
1011  3042          DCA C3
1012  1440  NXT,    TAD I C1    /LOOK AT FIRST 2 CHARS.
1013  7650          SNA CLA     / OF FILE NAME
1014  2066          ISZ FNO     /NO NAME
1015  1027          TAD P5
1016  1040          TAD C1
1017  3040          DCA C1
1020  2042          ISZ C3
1021  5226          JMP .+5
1022  1040          TAD C1
1023  1020          TAD P3
1024  3040          DCA C1
1025  5210          JMP NXT-2
```

```
1026  2041          ISZ C2
1027  5212          JMP NXT
1030  1066          TAD FNO
1031  4776          JMS OUTT    /TYPE NO. OF FREE FILES
1032  1060          TAD SP
1033  4775          JMS TYPE
1034  1774          TAD F
1035  4775          JMS TYPE
1036  1060          TAD SP
1037  4775          JMS TYPE
1040  1075          TAD COL
1041  4775          JMS TYPE
1042  1046          TAD ASAMBF  /INIT. SAM POINTER
1043  3040          DCA C1
1044  1105          TAD NSAM    /INIT. SAM BUFF. COUNT
1045  7112          CLL RTR
1046  7012          RTR
1047  7012          RTR
1050  7041          CIA
1051  3041          DCA C2
1052  3066          DCA FNO
1053  1440  NXT2,   TAD I C1    /GET A SAM WORD
1054  3073          DCA TEMP    / & STORE IT
1055  1073          TAD TEMP
1056  0025          AND P77     /LOOK FOR XX00
1057  7650          SNA CLA
1060  2066          ISZ FNO     /FOUND ONE
1061  1073          TAD TEMP
1062  0026          AND P7700   /LOOK FOR 00XX
1063  7650          SNA CLA
1064  2066          ISZ FNO     / FOUND ONE
1065  2040          ISZ C1
1066  2041          ISZ C2      /END OF SAMS ?
1067  5253          JMP NXT2    /NO
1070  1066          TAD FNO
1071  4776          JMS OUTT    /TYPE NO. OF FREE BLOCKS
1072  1060          TAD SP
1073  4775          JMS TYPE
1074  1773          TAD B
1075  4775          JMS TYPE
1076  4777          JMS CRLF
1077  3047          DCA OPT     /CLEAR OPTION
1100  5772          JMP OPTN    /RETURN TO OPTION SELECTION
                /
1101  0000  PRNT,   0
1102  3142          DCA CHARS
1103  1142          TAD CHARS
1104  0026          AND P7700
1105  7112          RTR CLL
```

```
1106  7012          RTR
1107  7012          RTR
1110  1024          TAD P200
1111  1023          TAD P40
1112  4775          JMS TYPE
1113  1142          TAD CHARS
1114  0025          AND P77
1115  1024          TAD P200
1116  1023          TAD P40
1117  4775          JMS TYPE
1120  5701          JMP I PRNT
                /
1121  0000  DNDATA, 0
1122  1066          TAD FNO
1123  4776          JMS OUTT    /TYPE FILE NO.
1124  1075          TAD COL
1125  4775          JMS TYPE
1126  1040          TAD C1
1127  1020          TAD P3
1130  3042          DCA C3
1131  1442          TAD I C3
1132  4771          JMS ABFSU   /TYPE FILE CLASSIFICATION
1133  1116          TAD FLD
1134  4775          JMS TYPE    /TYPE FIELD
1135  1040          TAD C1
1136  7001          IAC
1137  3042          DCA C3
1140  1442          TAD I C3
1141  4776          JMS OUTT    /START ADDR.
1142  1131          TAD COMMA
1143  4775          JMS TYPE
1144  1116          TAD FLD
1145  4775          JMS TYPE
1146  2042          ISZ C3
1147  1442          TAD I C3
1150  4776          JMS OUTT    /S. A. (ENTRY PT.)
1151  1076          TAD SCOL
1152  4775          JMS TYPE
1153  5721          JMP I DNDATA
                /
1171  1676
1172  0250
1173  1736
1174  1737
1175  0342
1176  0463
1177  0351
                PAGE
                /
1200  4777  SEARCH, JMS CRLF
1201  3101          DCA WORD1
1202  3102          DCA WORD2
```

```
1203  4342          JMS GET
1204  5201          JMP SEARCH+1
1205  5244          JMP SERCH    /BLANK FILE REQUESTED
1206  7106          RTL CLL
1207  7006          RTL
1210  7006          RTL
1211  3101          DCA WORD1    /SAVE FIRST LEFT HALF
1212  4342          JMS GET
1213  5236          JMP WHICH
1214  5244          JMP SERCH    /ONE CHAR. FILE NAME
1215  1101          TAD WORD1    /ONE CHAR. FILE NAME
1216  3101          DCA WORD1    /SAVE FIRST PACKED WORD
1217  4342          JMS GET
1220  5236          JMP WHICH
1221  5244          JMP SERCH    /TWO CHAR. FILE NAME
1222  7106          RTL CLL
1223  7106          RTL CLL
1224  7006          RTL
1225  3102          DCA WORD2    /SAVE SECOND LEFT HALF
1226  4342          JMS GET
1227  5236          JMP WHICH
1230  5244          JMP SERCH    /THREE CHAR. FILE NAME
1231  1102          TAD WORD2
1232  3102          DCA WORD2    /SAVE SECOND PACKED WORD
1233  4342          JMS GET      /LOOKING FOR CR
1234  5236          JMP WHICH    / IF NOT TYPED PREVIOUSLY
1235  5244          JMP SERCH    /FOUND CR
1236  7200  WHICH,  CLA          /RO. OR EXTRA CHAR.
1237  1060          TAD SP
1240  4776          JMS TYPE
1241  1077          TAD QMARK
1242  4776          JMS TYPE
1243  5200          JMP SEARCH
                /
1244  1020  SERCH,  TAD P3
1245  1043          TAD ADNBF
1246  3040          DCA C1       /BUFFER POINTR
1247  1125          TAD LF
1250  4776          JMS TYPE
1251  3066          DCA FNO      /INIT. FILE NO.
1252  1025          TAD P77
1253  7041          CIA
1254  3041          DCA C2       /FILE COUNT
1255  1034          TAD M31
1256  3065          DCA FNOK
1257  1101          TAD WORD1    /COMPARE WITH PREVIOUS FILE NAME
1260  1110          TAD LWORD1
1261  7440          SZA
1262  5265          JMP LST
1263  1102          TAD WORD2
1264  1111          TAD LWORD2
```

```
1265  3112  LST,     DCA LAST     /=Ø; IF WORD = LWORD
1266  144Ø  TEST,    TAD I C1     /GET A FILE NAME
1267  2Ø4Ø           ISZ C1       / & COMPARE
127Ø  2Ø66           ISZ FNO      /WITH WORD1,2
1271  7Ø41           CIA
1272  11Ø1           TAD WORD1
1273  764Ø           SZA CLA
1274  53Ø2           JMP NOTYET   /NOT EQUAL TO WORD1
1275  144Ø           TAD I C1
1276  7Ø41           CIA
1277  11Ø2           TAD WORD2
13ØØ  765Ø           SNA CLA
13Ø1  5315           JMP CHK      /MATCH FOUND
13Ø2  2Ø65  NOTYET,  ISZ FNOK
13Ø3  53Ø7           JMP THSDN
13Ø4  1Ø34           TAD M31
13Ø5  3Ø65           DCA FNOK
13Ø6  1Ø2Ø           TAD P3
13Ø7  1Ø3Ø  THSDN,   TAD P4
131Ø  1Ø4Ø           TAD C1
1311  3Ø4Ø           DCA C1
1312  2Ø41           ISZ C2
1313  5266           JMP TEST
1314  5236           JMP WHICH
1315  1112  CHK,     TAD LAST
1316  764Ø           SZA CLA      /A REPEAT FILE NAME ?
1317  5324           JMP SETLF    /NO
132Ø  1113           TAD LFNO     /YES
1321  1Ø66           TAD FNO      /IS THIS THE FILE NO. SEARCHED
1322  775Ø           SNA SPA CLA  /FOR LAST TIME ?
1323  53Ø2           JMP NOTYET   /SAME FILE NO. FOUND
1324  1Ø66  SETLF,   TAD FNO      /SAVE
1325  7Ø41           CIA
1326  3113           DCA LFNO     / -(FILE NO.)
1327  11Ø1           TAD WORD1
133Ø  7Ø41           CIA
1331  311Ø           DCA LWORD1   / -(WORD1)
1332  11Ø2           TAD WORD2
1333  7Ø41           CIA
1334  3111           DCA LWORD2   / -(WORD2)
1335  1Ø27           TAD P5
1336  3115           DCA SSS
1337  4775           JMS DNDATA
134Ø  4774           JMS SRCH     /GET & TYPE FILE STATISTICS
1341  52ØØ           JMP SEARCH
                     /
                     /FETCH A CHAR. FROM K/B
                     /IF ↑ L RETURN TO OPTION
                     /IF RO. PC=PC+1 [AC] =Ø
                     /IF CR  PC=PC+2 [AC] =Ø
                     /IF ↑C  RETURN TO MONITOR
```

```
                /ELSE   PC=PC+3 [AC] =STRIPPED ASCII+40
                /
1342  0000      GET,    0
1343  6031              KSF
1344  5343              JMP .-1
1345  6036              KRB
1346  6046              TLS
1347  3100              DCA CHAR
1350  1100              TAD CHAR
1351  4773              JMS CTRL      /↑L ?
1352  1062              TAD MCR
1353  7450              SNA           / CR ?
1354  5367              JMP GOTCR
1355  1063              TAD MRO
1356  7450              SNA           /RUBOUT ?
1357  5742              JMP I GET
1360  2342              ISZ GET
1361  1064              TAD MCTRLC
1362  7650              SNA CLA       /↑C ?
1363  5514              JMP I MONRET
1364  1100              TAD CHAR
1365  1023              TAD P40
1366  0025              AND P77
1367  2342    GOTCR,    ISZ GET
1370  5742              JMP I GET
                /
1373  0334
1374  0675
1375  1121
1376  0342
1377  0351
                PAGE
                /
1400  4777    DUMP,     JMS GET
1401  5776              JMP WHAT      /R. O.
1402  5775              JMP OPTN-2
1403  1117              TAD M20
1404  3107              DCA SAMN
1405  1107              TAD SAMN
1406  7550              SNA SPA
1407  5776              JMP WHAT      /ILLEGAL I/P (ASCII<261)
1410  7041              CIA
1411  1105              TAD NSAM
1312  7710              SPA CLA
1413  5776              JMP WHAT      /TOO LARGE SAM NO. ASKED FOR
1414  1107              TAD SAMN
1415  7112              CLL RTR       /GET START OF SAM BLK. IN CORE
1416  7012              RTR
1417  7012              RTR
1420  1037              TAD M200
1421  1046              TAD ASAMBF
```

```
1422  3Ø4Ø          DCA C1
1423  1Ø37          TAD M2ØØ
1424  3Ø41          DCA C2
1425  4774          JMS CRLF
1426  4774          JMS CRLF
1427  1Ø31  D1,     TAD M8
143Ø  3Ø42          DCA C3
1431  6Ø31          KSF           /RETURN TO OPTION ?
1432  741Ø          SKP
1433  5773          JMP OPTN-4    /YES
1434  144Ø          TAD I C1      /GET A SAM WORD
1435  2Ø4Ø          ISZ C1
1436  4772          JMS OUTT
1437  1Ø6Ø          TAD SP
144Ø  4771          JMS TYPE
1441  1Ø6Ø          TAD SP
1442  4771          JMS TYPE
1443  2Ø41          ISZ C2        /ALL DONE ?
1444  741Ø          SKP
1445  5252          JMP D2        /YES
1446  2Ø42          ISZ C3        /END OF LINE ?
1447  5231          JMP D1+2      /NO
145Ø  4774          JMS CRLF
1451  5227          JMP D1
1452  4774  D2,     JMS CRLF
1453  4774          JMS CRLF
1454  3Ø47          DCA OPT
1455  577Ø          JMP OPTN
                /
1456  4774  HALT,   JMS CRLF
1457  4777          JMS GET       /FIRST DIGIT
146Ø  5776          JMP WHAT
1461  5776          JMP WHAT
1462  1117          TAD M2Ø
1463  71Ø6          CLL RTL
1464  7ØØ4          RAL
1465  3Ø66          DCA FNO
1466  4777          JMS GET       /SECOND DIGIT
1467  5776          JMP WHAT
147Ø  5776          JMP WHAT
1471  1117          TAD M2Ø
1472  1Ø66          TAD FNO
1473  3Ø66          DCA FNO       /STORE FILE NO.
1474  1Ø66          TAD FNO
1475  7Ø41          CIA
1476  3Ø67          DCA MFNO
1477  3Ø4Ø          DCA C1
15ØØ  1Ø66          TAD FNO
15Ø1  1Ø34          TAD M31
15Ø2  751Ø          SPA
15Ø3  531Ø          JMP WSET
```

```
1504  1034          TAD M31
1505  7500          SMA
1506  2040          ISZ C1
1507  2040          ISZ C1          /=(DN NO.-1)
                /
1510  7200    WSET, CLA
1511  1040          TAD C1          /SET CORE ADDR.
1512  7112          CLL RTR
1513  7012          RTR
1514  7012          RTR
1515  1043          TAD ADNBF
1516  3767          DCA WCORE
1517  1040          TAD C1
1520  7440          SZA
1521  5327          JMP WSET2
1522  1145          TAD P201        /C=0 ; DN 1
1523  3766          DCA WLINK
1524  1021          TAD P177
1525  3765          DCA WBLOK
1526  5764          JMP FINDIT
1527  1036    WSET2,TAD M2
1530  7440          SZA
1531  5342          JMP WSET1
1532  3766          DCA WLINK       /C=2 ; DN 3
1533  1105          TAD NSAM
1534  1035          TAD M4
1535  7740          SMA SZA CLA     /DISC OR DECTAPE ?
1536  1027          TAD P5          /DECTAPE
1537  1146          TAD P202        /DISC
1540  3765          DCA WBLOK
1541  5764          JMP FINDIT
1542  7001    WSET1,IAC
1543  7640          SZA CLA
1544  5776          JMP WHAT        /SOFTWARE ERROR
1545  1145          TAD P201
1546  3765          DCA WBLOK
1547  1105          TAD NSAM
1550  1035          TAD M4
1551  7740          SMA SZA CLA     /DISC OR DECTAPE ?
1552  1027          TAD P5          /DECTAPE
1553  1146          TAD P202        /DISC
1554  3766          DCA WLINK
1555  5764          JMP FINDIT
1564  1600
1565  1745
1566  1747
1567  1746
1570  0250
1571  0342
1572  0463
1573  0244
```

```
1574  ØØ351
1575  ØØ246
1576  ØØ273
1577  1342
                PAGE
                /
16ØØ  1Ø22  FINDIT,  TAD P7
16Ø1  1346           TAD WCORE
16Ø2  3Ø41           DCA C2
16Ø3  1Ø34           TAD M31
16Ø4  3Ø42           DCA C3
16Ø5  1441  FIND,    TAD I C2      /LOOK FOR FILE NO.
16Ø6  ØØ25           AND P77
16Ø7  1Ø67           TAD MFNO
161Ø  765Ø           SNA CLA
1611  522Ø           JMP GOTIT
1612  1Ø41           TAD C2
1613  1Ø27           TAD P5
1614  3Ø41           DCA C2
1615  2Ø42           ISZ C3
1616  52Ø5           JMP FIND
1617  5777           JMP WHAT      /ILLEGAL FILE NO.
                /
                /
162Ø  4776  GOTIT,   JMS DATA
1621  1Ø76           TAD SCOL
1622  4775           JMS TYPE
1623  1144           TAD SAVEF
1624  764Ø           SZA CLA
1625  5777           JMP WHAT      /NON-SAVE FILE ASKED FOR
1626  4774           JMS GET       /LOOK FOR 7636 FROM K/B
1627  5777           JMP WHAT
163Ø  5777           JMP WHAT
1631  1122           TAD M27
1632  764Ø           SZA CLA       /7 ?
1633  5777           JMP WHAT
1634  4774           JMS GET
1635  5777           JMP WHAT
1636  5777           JMP WHAT
1637  1121           TAD M26
164Ø  764Ø           SZA CLA       / 6 ?
1641  5777           JMP WHAT
1642  4774           JMS GET
1643  5777           JMP WHAT
1644  5777           JMP WHAT
1645  112Ø           TAD M23
1646  764Ø           SZA CLA       /3 ?
1647  5777           JMP WHAT
165Ø  4774           JMS GET
1651  5777           JMP WHAT
1652  5777           JMP WHAT
```

```
1653  1121          TAD M26
1654  764Ø          SZA CLA      /6 ?
1655  5777          JMP WHAT
1656  1441          TAD I C2
1657  3Ø42          DCA C3       /STORE S. A.
166Ø  1143          TAD P7636
1661  3441          DCA I C2
1662  4773          JMS CRLF
1663  2Ø41          ISZ C2
1664  4776          JMS DATA     /TYPE NEW FILE STATISTICS
1665  4774          JMS GET
1666  527Ø          JMP NOHALT /ABANDON MODIFICATION OF DN BLK,
1667  5273          JMP MODDN /CR=PROCEED
167Ø  1Ø42  NOHALT, TAD C3       /ILLEGAL CHAR. OR SYSTEM ERROR
1671  3441          DCA I C2     /RESTORE S. A.
1672  5772          JMP OPTN
1673  4342  MODDN,  JMS WBLK     /ACTUALLY MODIFY DN BLK.
1674  5675          JMP I MONHLT /GO TO MONITOR HALT
1675  7636  MONHLT,7636
            /
1676  ØØØØ  ABFSU,   Ø           /DECODE 5TH WORD OF DN ENTRY
1677  3Ø7Ø           DCA TSTW
17ØØ  1Ø7Ø           TAD TSTW     /LOOK AT BITS Ø,1
17Ø1  71Ø6           CLL RTL
17Ø2  7ØØ4           RAL
17Ø3  ØØ2Ø           AND P3
17Ø4  3Ø73           DCA TEMP
17Ø5  1Ø73           TAD TEMP
17Ø6  1Ø32           TAD M3
17Ø7  3144           DCA SAVEF    /=Ø FOR A SAVE FILE
171Ø  1Ø7Ø           TAD TSTW     /LOOK AT BIT 5
1711  71Ø6           CLL RTL      /FORM FILE CLASSIFICATION :-
1712  7ØØ6           RTL          /Ø = ASCII; 1 = BINARY; 2 = FTR BIN.
1713  7ØØ6           RTL          /3 = USER; 4 = SYSTEM
1714  ØØ22           AND P7
1715  3Ø7Ø           DCA TSTW     /= FIELD
1716  72Ø4           CLA RAL
1717  1Ø73           TAD TEMP     /=CLASSIFICATION
172Ø  1334           TAD ACLASS
1721  3Ø73           DCA TEMP
1722  1Ø7Ø           TAD TSTW
1723  745Ø           SNA
1724  1117           TAD M2Ø
1725  1137           TAD C26Ø
1726  3116           DCA FLD      /FIELD # +26Ø (F#Ø = 24Ø)
1727  1473           TAD I TEMP
173Ø  4775           JMS TYPE
1731  1131           TAD COMMA
```

```
1732  4775          JMS TYPE
1733  5676          JMP I ABFSU
1734  1735  ACLASS, CLASS
1735  Ø3Ø1  CLASS,  3Ø1          /A
1736  Ø3Ø2  B,      3Ø2          /B
1737  Ø3Ø6  F,      3Ø6          /F
174Ø  Ø325          325          /U
1741  Ø323          323          /S
                    /
1742  ØØØØ  WBLK,   Ø
1743  4474          JMS I SYSIO
1744  ØØØ5          5            /WRITE
1745  ØØØØ  WBLOK,  Ø
1746  ØØØØ  WCORE,  Ø
1747  ØØØØ  WLINK,  Ø
175Ø  527Ø          JMP NOHALT
1751  5742          JMP I WBLK
                    /
1772  Ø25Ø
1773  Ø351
1774  1342
1775  Ø342
1776  Ø4ØØ
1777  Ø273
                    PAGE
                    /
                    DNBF=.
                    /
```